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Patterns of Airflow in Namib Interdunes: their characteristics and significance

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Interdunes are spatially important areas in many regions of dunes, and yet in relation to the amount of research that has been conducted on the dynamics of sand dunes, interdunes have been relatively ignored. It is only quite recently that airflow and sediment transport in the lee of dunes have been studied (e.g. Sweet and Kocurek, 1990; Frank and Kocurek, 1996; Walker, 1999; Nickling *et al*., 2002). The lack of research attention attracted by interdune dynamics is in spite of the considerable importance that their study may have for our understanding of sand dune systems as a whole.

In particular, through studying the dynamics of interdunes, our understanding of their role in controlling dune spacing may be improved. A range of theories exists to explain the interdune spacing exhibited between dunes, and each theory incorporates a different view concerning the role of the dynamics in interdunes. One theory is that wind flow patterns within interdunes act as a fundamental control on dune spacing. A contrasting idea holds that interdune dynamics have no significance for dune geomorphology, and interdunes are considered 'dynamically neutral' in terms of dune development.

To investigate the relative significance of interdune dynamics, the operation of key geomorphological processes within interdunes was observed in a period of fieldwork in the Skeleton Coast dunefield and northern Namib Desert in Namibia, southern Africa. Data were gathered for the patterns of airflow, turbulence and sediment transport as observed across relatively simple transverse dune interdunes, with a range of different interdune situations being investigated. This paper will present data on airflow patterns in interdunes as collected from the fieldwork, and will discuss the significance of the results in terms of the dynamics of the sand dune system as a whole.

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